THE NEW ENGLAND QVARTERLY

Registered in the United States Patent Office

An Historical Review of New England Life and Letters

EDITORS

SAMUEL ELIOT MORISON

ARTHUR M. SCHLESINGER
FREDERIC I. CARPENTER
ALLYN B. FORBES

STANLEY T. WILLIAMS
RANDALL STEWART
MILTON ELLIS

KENNETH B. MURDOCK
Book Review Editor

STEWART MITCHELL
Managing Editor

Volume X Number 1

March, 1937

CONTENTS

The New England Quarterly

Burning the Charlestown Convent	*R. A. Billington*	4
The New England Frontier	*C. K. Shipton*	25
Lowell: a Commercial Utopia	*Allan Macdonald*	37
A Yankee Goes South: 1833	*C. S. Davies*	63
Harvard after Three Centuries	*Stewart Mitchell*	84
Memoranda and Documents		
Franklin's Red-Line Map	*Lawrence Martin* *Samuel F. Bemis*	105
When Was Copley Born?	*H. W. Foote*	111
John Winthrop, Jr., on Indian Corn	*Fulmer Mood*	121
A Seigneury of New France	*E. L. Coleman*	133
Book Reviews		
The Letters of Mrs. Henry Adams, Edited by Ward Thoron	*C. K. Bolton*	139
American Opinion of Roman Catholicism, by Sister Mary Augustina (Ray)	*George La Piana*	143
Early American Rooms, Edited by Russell H. Kettell	*E. J. Hipkiss*	146
A History of Dedham, by Frank Smith	*C. K. Shipton*	148
Major John Mason, by Louis B. Mason	*R. P. Stearns*	151
Robert Hallowell Richards, by Robert H. Richards	*H. G. Pearson*	153
Revolutionary New Hampshire, by R. F. Upton	*L. S. Mayo*	154
Commons Debates: 1621, Edited by Wallace Notestein, Frances H. Relf and Hartley Simpson	*W. C. Abbott*	156
Publications, Colonial Society of Massachusetts	*V. W. Crane*	158
Royal Instructions to British Colonial Governors: 1670–1776, Edited by Leonard W. Labaree	*S. E. Morison*	159
German Influence in American Education and Culture, by John A. Walz	*J. T. Hatfield*	162
The Lonely Wayfaring Man, by Townsend Scudder	*R. L. Rusk*	163
The Problem of Wineland, by Halldór Hermannsson	*E. B. Delabarre*	165
The British Empire before the American Revolution, by Lawrence Henry Gipson	*C. A. Barker*	168
Talcott Williams, by Elizabeth Dunbar	*H. A. Larrabee*	171
Forays and Rebuttals, by Bernard DeVoto	*Crane Brinton*	172
Emerson and the Problems of To-day, by Newton Dillaway; and Men of Concord, Edited by Francis H. Allen	*F. I. Carpenter*	174
The American Medical Profession, by Henry B. Shafer	*J. F. Fulton*	177
Harvard et la France, Revue d'Histoire Moderne	*S. E. Morison*	179
Waltham . . . 1630–1884, by Edmund L. Sanderson	*C. K. Shipton*	180
John Endecott, by Lawrence Shaw Mayo	*J. D. Phillips*	181
Chasing the Bowhead, by Captain Hartson H. Bodfish and Joseph C. Allen	*C. J. Olson, Jr.*	183
Mrs. Eddy Purloins from Hegel, by Walter M. Haushalter	*J. D. Wild*	184
Short Notices		186
A Bibliography of New England, 1936	*A. B. Forbes*	193
Notes on Contributors, and Corrections		207
Donors to the New England Quarterly, 1937		208

JOHN WINTHROP, JR., ON INDIAN CORN

FULMER MOOD

THERE is some evidence to show that one of the effects of the civil wars on English agriculture was to bring about an increased interest in improved methods and new crops. The revolution in English farming that was eventually to follow included not only the reclamation of land by drainage and irrigation, but also the use of crops hitherto little known to the English: turnips and other roots, grasses, clover, and the like. It did not escape the attention of some of the thoughtful men of the period of the Restoration that an earlier importation, the potato plant, had become of vital importance in the economy of Stuart Ireland, and it was therefore only a short step forward to consider whether there were not still other crops which could be domesticated for use in English fields. The civil wars had brought about the economic ruin of many landlords, and so "spirited farming" rather than the traditional conservative methods began more and more to be thought of as a restorative of vanished fortunes.[1]

Among the intellectuals of the day who concerned themselves with the problems of improving the efficiency of English agriculture were Samuel Hartlib[2] and Robert Boyle. Hartlib published numerous treatises on agriculture, of which perhaps the best known is his *Legacy of Husbandry* (1655). We are more likely to think of Boyle's name in connection with pure science and his leadership in organizing the Royal Society rather than in relation to agrarian arts, but Boyle, as a matter of fact, was a prominent figure in the discussion of the techniques of improved farming. Early in the life of the Royal Society a "Georgical Committee" of thirty persons was appointed; elaborate questionnaires were drawn up; and these were distributed in many parts of the kingdom. It was hoped that from the answers to these much useful information could be collected and reduced to order for the general advancement of English farmers.[3]

---

[1] Ephraim Lipson, *Economic History of England* (London, 1931), II, 373.

[2] *Dictionary of National Biography* (London, 1891), XXV, 73.

[3] *Economic History Review* (London), IV, 1 (October, 1932): R. Lennard, "English Agriculture under Charles II: The Evidence of the Royal Societies' 'Enquiries,'" 23–45.

Boyle was thoroughly at home with the scientific knowledge of the time, and his restless, curious mind roamed unceasingly through the many books of travel and records of exploration which had been accumulated by 1660 as a result of the visits of Englishmen to strange and remote lands. He was in the habit of ransacking Hakluyt, Purchas, and similar writers for information that might be of possible economic value. In the archives of the Royal Society at London there are still to be seen scores of sheets of notes which he made from Purchas and other compilations. When once Boyle isolated an item that interested him, he was in the habit of trying to test its value by having Englishmen who were leaving Europe make careful enquiries on the subject and then draw up reports which they were expected to send back to him. In the end Boyle worked out a systematic list of queries — a kind of " Intelligent Man's Key to Intelligent Questions to Ask " — and published the list where all could read it in the *Philosophical Transactions:* " General Heads for a Natural History of a Country, great or small, imparted . . . by Mr. Boyle." [4] A single excerpt suffices to show Boyle's curiosity about foreign methods of farming. These are what travellers were requested to note and make reports about: " What the Nature of the Soyle is, whether Clays, Sandy, *etc.* or good Mould; and what Grains, Fruits, and other Vegetables, do the most naturally agree with it: As also, by what particular Arts and Industries the Inhabitants improve the Advantages, and remedy the Inconveniences of their Soyle: What hidden qualities the Soyle may have (as that of Ireland, against Venomous Beasts, *etc.*)." [5]

Those with special information, if they happened to be close at hand, were not ignored. In January, 1662, John Winthrop, Junior, chanced to be in London on important business for the Connecticut colony, of which he was governor at the time. It was in this very month that Winthrop was elected to membership in the Royal Society.[6] Boyle must at once have improved the opportunity to question this well-informed colonial, for under date of July 29, 1662, we find that Winthrop wrote to him, apologizing for his tardiness in satisfying Boyle's request to supply him with certain

---

[4] *Philosophical Transactions* (London), II (April 2, 1666), 186.
[5] *Philosophical Transactions* (April 2, 1666), 188.
[6] Thomas Birch, *History of the Royal Society* (London, 1756), I, 68.

information. He had written an essay on American maize, Winthrop explained, but modestly declared he had his doubts concerning the completed task:

. . . there will appeare many impertinences as to the cheife [*sic*] matters that concerne that subject (the husbandry of it being, as I remember chiefly desired, together with the manner of the bread and beare made out of it). What is added impertinently was intended to obviate some questions, and make knowne some other things that are only occasional, which I was the bolder to doe being intended only for your honors private view, and an other honorable friend [perhaps Henry Oldenburg, Secretary of the Royal Society] then present when I had your commands about it.[7]

Maize was no novelty by the time of the Restoration. The Elizabethan herbalist, John Gerard (1545–1612), had looked into the qualities of the plant and penned an unfavorable judgment. In his great compilation, published first in 1597 and republished in 1633 and again in 1636, he wrote: " It is planted in the gardens of these Northern regions [Virginia and Norumbega?], where it commeth to ripeness when the summer falleth out to be faire and hot; as my selfe haue seen by proof in myne owne garden [near Fetter Lane in Holborn, London]." [8] Maize or Indian corn

. . . doth nourish far lesse than either wheat, rie, barly, or otes. The bread which is made thereof is meanely white, without bran: it is hard and dry as Bisket is, and hath in it no clamminess at all; for which cause it is of hard digestion, and yeeldeth to the body little or no nourishment; it slowly descendeth, and bindeth the belly, as that doth which is made of Millet or Panick. Wee haue as yet no certaine proofe or experience concerning the vertues of this kinde of Corne; although the barbarous Indians, which know no better, are constrained to make a vertue of necessitie, and thinke it a good food: whereas we may easily judge, that it nourisheth but little, and is of hard and euill digestion, a more conuenient food for swine than for man.[9]

A passage in Parkinson's *Theatricum Botanicum* of 1640 set out to confute an opinion fantastic enough to win deathless

---

[7] Royal Society, London: Boyle Manuscripts, Bl. v, 197.

[8] John Gerard, *The Herball or Generall Historie of Plants . . . Enlarged and Amended by Thomas Johnson* (London, 1636), 82.

[9] Gerard, *Herball*, 83.

obloquy from every right-thinking farmer west of the Alleghanies.

> Many doe condemne this Maiz to be as dry and of as little nourishment as Millet or Panicke, but they doe not as I thinke rightly consider the thing, for although the graine be dry, yet the meale thereof is nothing so dry as of the *Turkie Millet,* but hath in it some clamminesse, which bindeth the bread close and giveth good nourishment to the body, for wee finde both the Indians and the Christians of all Nations that feede thereon, are nourished thereby in as good manner no doubt, as if they fed on Wheate in the same manner. . . . Of it is made drinke also, both in the *Indies* and our *English* plantations, that will intoxicate as quickly as our strong Beare if it bee made accordingly: but is found to be very effectuall to hinder the breeding of the Stone, so that none are troubled therewith that doe drinke thereof, the leaves thereof are used also to fatten their Horses and cattle.[10]

Perhaps it was to settle this dispute between weighty authorities that Boyle asked Winthrop to write his little essay. The Anglo-American, for his part, was aware of Gerard's opinion of maize, for he mentions the herbalist by name in his text. And we shall probably not go very far astray if we credit Boyle, too, with a knowledge of Gerard's work.

Did Boyle think to introduce maize into England, if circumstances should prove favorable? There can be no certainty about the answer. Nevertheless, Boyle, despite his devotion to theory and science in general, was a man dominated by practical aims, and when he took the trouble to procure the writing of an essay on American corn, he had (it may be suspected) utilitarian motives in mind.

The essay is here published in full for the first time. An abbreviated text was brought out in an issue of the *Philosophical Transactions* in 1678.[11] The original manuscript and Winthrop's covering letter are now in the possession of the Royal Society, by the kindness of the council of which they are reproduced.[12]

To students of our colonial cuisine no less than to those interested in agriculture the essay will be of value. It may serve, too, as a specimen of the descriptive or scientific prose of the age, and

---

[10] John Parkinson, *Theatricum Botanicum* (London, 1640), 1138–1139.
[11] *Philosophical Transactions,* 142 (1678), 1065–1069.
[12] Royal Society, London: Catalogued as Bl. v, 199.

although the writing is hardly elegant, it is informed throughout by a sincere appreciation of the importance of corn in colonial economy that lends to it a modest degree of charm, if not of distinction.

INDIAN CORNE

The Corne which was used in New England before the English inhabited any of those parts, is called by the Natives there Weachim, and is the same which hath beene knowne by the Name of Mays in some Southerne partes of America. This sorte of Corne is generally made use of in many parts of America for their food, and although in the Northerne Plantations, where the English and Dutch are settled, there is plenty of Wheat, and other Graine, yet this sort of Corne is still much in use there both for Bread, and other kind of food made out of it. It seemes in those times before it was so well knowne, Mr. Gerard had beene informed of it, as if it were a Graine not so pleasant or fitt to be Eaten by mankind, as may appeare by what he writeth of it in his Herball [13] page 83, That it is hard of Digestion, and yeildeth little or no Nourishment *etc,* (yet acknowledgeth, there had beene yet no certaine proofe or experience of it), yet it is now found by much Experience, that it is wholesome and pleasant for Food of which great Variety may be made out of it.

The Composure of the Eare is very beautifull, being sett in Even Rowes, every Graine in each Rowe over against the other, at equall distance, there being commonly Eight Rowes upon the Eare and sometimes more, according to the Goodness of the Ground. It hath also usually above thirty Graines in one Row, the number of Rowes and Graines being according to the Strength of the Ground, the Eare is commonly about a Span long.

Nature hath delighted it selfe to beautify this Corne with great Variety of Colours, the White, and the Yellow being most common, being such a yellow as is betwene Straw Colour, and a pale yellow; there are also of very many other Colours, as Red, Yellow, Blew, Olive Colour, and Greenish, and some very black and some of Intermediate degrees of such Colours, also many sorts of mixt colours and speckled or striped, and these various coloured Eares often in the same field and some Graines that are of divers Colours in the same Eare.

This Beautifull noble Eare of Corne is Cloathed and Armed with strong thick huskes of many doubles, which provident nature hath made usefull to it many wayes, for it not onely defends it from the cold, and too much moisture of unseasonable

[13] A reference to the edition of 1636.

Raine (which sometimes may happen) and the Cold of the Nights which might hinder the Ripening of it (being the latter end of September in some parts before it be full Ripe) and possibly the Injury of some blasting Winds, but also defends it from the Crowes, Sterlings, and other Birds, which would otherwise devour whole fields of it before it could come to its full maturity. These Birds especially Sterlings come in greate flights into the fields, when the Eare beginneth to be full, before it hardneth, and being allured by the Sweetness of the Corne, will sitt upon the stalke, or the Eare it selfe, and so pick at the Corne through the huske at the top of the Eare (for there it is tenderest) and not cease that worke till they have pulled away some of the huske that they may come at the Corne, which wil be plucked out so farr as they can come at it. There groweth within the Huske upon the Corne a matter like small threads which appeare out of the top of the Eare like a tuft of haire or Silke.

The Stalke of this Corne groweth to the Height of 6 or 8 foot and more or less according to the Condition of the Ground, and the kind of Seed. The Stalkes of the Virginian Seed grow taller then that of the New England, or the intermediate places: But there is another sort which the Northerne Indians farr up in the Countrey use that groweth much shorter then the New England Corne, the Stalke of every sort is Joynted like to a Cane and is full of sweete Juice like the Sugar Cane, and a Syrrop as sweete as Sugar Syrrop may be made of it which hath beene often tryed, and Meates Sweetned with it have not beene discerned, from the like sweetness with Sugar, some trialle may make it knowne whether it may be brought into a dry Substance like Sugar, but it is probable it may be done. At every Joynt there are long Leaves like flaggs, and at the very top there is a bunch like Eares as if it were some kind of small Graine, and Blossoms like the Blossoms of Rye upon them but are wholy Barren, and an empty huske conteyning nothing in it.

The time of planting this Corne in that Countrey is any time betweene the middle of March and the beginning of June, but the most usuall time is from the middle of Aprill to the middle of May: The Indians observe in some parts of that Countrey a Rule from the comeing up of a Fish called Aloofes[14] into the Rivers and Brookes for the time to begin their planting, in other parts they observe the Leaves of some trees beginning to put forth:

In the Southerly parts of that Continent as Virginia, and Florida they have their sooner Seasons, and in the Northerly parts, and Upland parts are later, where they use a peculiar

[14] Alewives. Winthrop's use of "aloofes" supplied the editor of the *New English Dictionary*, I (1888), 215, with the earliest use of this rare word.

kind of that Corne which is called Mowhawkes Corne, which though planted in June wil be Ripe in Season, the Stalkes are shorter than the other Sorts, and the Eares grow neerer the bottom of the Stalke and are generally of divers Colours.

The Manner of planting every kind of this Corne, is in Rowes at equall distance every way about five or Six foote asunder, they open the Earth with a How, takeing away the Superfices three or fower Inches deepe and the breadth of the How which is used, and in the middle of that hole they throw in fower, or five Graines of that Corne, a little distant one from the other, as they may fall and place themselves accidently covering them with Earth. Of these Graines if but two or three grow up it may do well, for some of them are usually plucked up by the Crowes or Birds, or Mouse-Squirrells (a little creature, that doth much hurt in some Fields newly planted). After the Corne is growne up, the length of an hand, it wilbe time to weed about it, which is done by a broad how, which cuts up the Weeds, and looseneth the Earth, and this Labour is so often performed as the Weeds do grow up in any Quantity.

When the Stalke beginneth to grow high, they draw (at the second weeding) a little Earth about it, and afterwards, as it groweth higher, and puteth forth the Eare, they draw so much Earth about these Stalkes, that maketh a little hill like hopp hills, using the same manner, as they do hopp grounds with broad Howes. After this they have no other business about it till Harvest, when they gather it, which doth not require great haste, (if it be secured from cattle) when it is gathered it must be as soon as may be stripped from the Huskes, except it be laid very thin, otherwise it will heate and grow mouldy, and sometimes sprout in the huskes: where they have Roome enough to spread the Eares thin, and keepe them dry, they onely pull off the huske, and lay the Eares thin in their Chambers and Garretts, but the Common way is to weave it together in long traices by some parts of the husks left upon the Eare (this worke they call traicing) and these traices they hang upon Stayes or other bearers without doors, or within, for it will keepe good and sweete hung in that manner all the Winter after, though it be in all weather without. The Natives commonly thresh it out as they gather it, and dry it well upon Matts in the Sun, and then bestow in holes in the Ground (which are their Barnes) well lined with withered Grass, and with Matts, and then covered with the like and over that covered with Earth, and so it keepes very well till they use it, this was the way of planting used by the Natives, and English also, But now the English have found out an Easier way of raising Quantity of that Corne by the helpe of the Plough, which is performed in this manner. In the planting time there are single furrowes ploughed through

the whole field, about Six foote asunder more or less, as they will plant in distance, then they plow such like furrowes Cross at the same distance, and where the Cross furrowes meete there they throw in the Corne as before mentioned, and cover it with an How, or with Running an other Furrow by the Plow, and that's all till the Weeds begin to overtop the Corne, then they plough over the rest of the field betweene these furrowes where they planted, and so turne in the Weeds, and this is done only a second time about the time of the Summer, they used to begin to hill the Corne with the How, and so the Ground is better loosened then with the How, and the Rootes of the Corne have more Liberty to Spread. So as there is not so much need of that kind of hilling, as is described before, yet they do cast up the Earth about the Corne as well as they can with the Plow, and some will after helpe it a little with the Plow neere the Hill, though others do not regard that way, where any Weeds escape the Plow, a little worke of the how will mend that defect. Where the Ground is not very good, or hath beene long planted and worne out, the Indians used to put two or three of those forementioned Fishes under each place upon which they planted their Corne, or if they had not time before planting, then they would put them afterwards into the Earth by the sides of those Corne hills, and by these meanes had far greater Crops then that ground would otherwise produce, many times more then double, the English have learned this good husbandry of the Indians, and do still use it in places, where those Mooses come up in greate plenty, or where they are neere the fishing Stages, haveing there the heads and Gurbage of Codfish in greate plenty at no charge, but the fetching. Some also have tried the Dung of their Cattle well Rotted, and putting a little under every place, or hill, and covered it with earth, and the Corne throwne in upon it, have had very good advantage in their Cropps by it; the Fields thus plowed for this Corne after the Cropp is off, are almost as well fitted for English Corne, specially Summer graine (As Peas or Summer Wheate) as if lying fallow they had an ordinary Summer tilth: The Indians and some English also (Especially in good ground or where it is well fished as before) at every hill of Corne will plant a kind of Beans with the Corne (they are like those here called French Beans or turky Beans) and in the Vacant places and betweene the Hills, they will plant Squashes and pumpions, loading the Ground with as much as it will beare; The Stalkes of the Corne serveing in stead of poles for the Beans to Climb up, which otherwise must have poles to hang upon. Many English also after the last Weeding their Ground sprinkle Turnep-seed between the hills, and so have after Harvest a good crop of turneps in the same Field.

The Stalke of this Corne cut up in due time (before too much

dried) and stacked up or laid up in a Barne drie, are good Winter Fodder for Cattle but they usually leave them upon the Ground, where the Cattle in the Winter will feed upon them, and leave onely the hardest part of the Stalkes next the Ground; which are pulled up by hand before the Land be againe planted or sowed: Those Stalkes which are about the Eare, are also good Fodder for Cattle given them for Change sometimes after Hay. The Indian Women make Basketts with them, splitting them into narrow parts, weaveing them artificially into severall fashioned Basketts.

This Corne the Indians dress it in severall manner for their food sometimes they boyle it whole, till it swell, and breake, and become tender, and then eate it with their Fish, or Venison in stead of Breade, or onely that without other foode, sometimes they bruise it in a Morter, and then boyle it and make good food of it, bakeing it under the Embers *etc,* but a very Common way of dressing of it is by parching it among the Ashes, which they do so artificially, by putting it amongst the hott Embers, and continually stirring of it that it wilbe thoroughly parched without any burneing, but be very tender, and turned almost quite the inside outward, which wilbe almost white and flowry, this they sift very cleane from the Ashes, and then beate it in their wooden Morters with a long Stone for a pestle, into fine meale, which is a constant food amongst them, both at home, and especially when they travell, being putt up into a Bagg for their Journey, being at all times ready, and may be Eaten either drie, or mixed with water; they find it a strengthening and wholesome diet, and is not apt to breed wormes in their Children or others, this is the food which their souldiers Carry with them in time of Warr. The English sometimes for Novelty will procure some of this to be made by the Indian Women, and adding Milke, or Sugar, and Water, will make it much more pleasant to be taken.

The English make very good Breade of the Meale, or flower of it being Ground in Mills, as other Corne, but to make good bread of it there is a different way of ordering of it, from what is used about the Bread of other Graine, for if it be mixed into stiff past, it will not be good as when it is made into a thinner mixture a little stiffer then the Battar for Pancakes, or puddings, and then baked in a very hott oven, standing all day or all Night therein, therefore some use to bake it in panns like puddings. But the most ordinary way is this, the Oven being very hott they have a great Wooden Dish fastened to a long staff, which may hold the quantity of a Pottle, and that being filled, they empty it on an heape in the Oven, upon the bare floore thereof cleane Swept, and so fill the Oven, and usually lay a second laying upon the top of the first, because the first will

otherwise be too thinn for the proportion of a Loafe because it will spread in the oven at the first pouring of it in: if they make it not too thinn it will ly in distance like Loaves, onely in some parts where they touch one another will stick together but are easily parted but some will fill the whole floore of the Oven as one intire Body and must then cut it out in greate peices; In just such manner handled it wilbe (if baked enough) of a good darke yellow Colour, but otherwise white which is not so wholesome nor pleasant, as when well baked of a deeper Colour. There is also very good Bread made of it, by mixing half, or a third parte, more or less of Ry or Wheate-Meale, or Flower amongst it, and then they make it up into Loaves, adding Leaven or yeast to it to make it Rise, which may be also added to that other thinner sorte beforementioned.

There is also another sort of Bread, which they used to make before they had Mills, which was in this manner, they beate the Corne in Morters of Wood, first watering of it a little that the huskes may come cleane off by the beateing. When it is beaten they sift the Meale out, and then they Winnow the Course parte, Seperating the loose hulls by the Wind, this Course parte which is seperated from the finer Meale, they boyle it till it be thick like batter, and then Cooleing of it, mix so much of the finer Meale, which was sifted out, as might make it into a past, of which they make Loaves, and bake them as other Bread. This kind of Bread is very well tasted and wholesome, but the best sort of Food which the English make of this Corne is that they call Sampe, which is made in this manner. They first Water the Corne, if with Colde Water a little longer, if with Water a little warmed a shorter time about halfe an hower more or less, as they find it needfull, according to the driness of the Corne, then they either beate it in a Morter as beforementioned but not so small, as for that use of makeing bread of it, but to be about the Biggness of Rice, though some will be a little smaller, and some a little greater, or Grind it gross as neere as they can about the bigness of Rice in handmills or other Mills, out of which they sift the Flower, or Meale very cleane (for whether they beate it or Grinde it there wilbe some little Quantity of Meale amongst it) then they winnow it in the wind, and so seperate the hulls from the rest this is to be boyled or Stued with a gentle Fire, till it be tender, of a fitt consistence, as of Rice so boyled, into which if Milke, or butter be put either with Sugar or without, it is a food very pleasant and wholesome, being easy of Digestion, and is of a nature Divertical and Clensing and hath no Quality of binding the Body, as the Herball supposeth, but rather to keepe it in a fitt temperature, but it must be observed, that it be very well boyled, the longer the better, some will let it be stuing the whole day: after it is Cold it groweth thicker, and it is Eaten commonly

by mixing a good Quantity of Milke amongst it. This was the most common diet of the planters, at the first beginning of planting in these parts and is still in use amongst them, and may be taken as well in Sickness as in health, even in feavers and other acute Diseases. A learned Physician that not long since lived in London (Doctor Wilson [15]) had every yeare some Quantity brought over ready beaten, and fitt to be boyled, and did order it to such Patients as he saw cause for it. It was observed that at the beginnings of the Plantations, where this foode was most in use it was very rare that any were troubled with the Stone, and amongst the Indians that Eate no other sorte of Corne but that, The English that have beene most acquainted with them, have beene informed by them, that the disease of the stone is very seldome knowne amongst them. It is accounted also a good meanes against the Scurvie.

The Indians have another sort of Provision out of this Corne, which they call Pondomenast – the English call it sweete Corne, which they prepare in this manner: When the Corne in the Eare is full, whiles it is yet greene it hath then a very sweete tast, this they gather and boyle a convenient time, and then they drie it, and put it up into Baggs or Basketts, for their store, and so use it as they have occasion boyleing of it againe either by it selfe, or amongst their Fish or Venison or Beavers Flesh, or such as they have, and this they account a principall Dish, either at their ordinary Meales or Feastivall times, they boyle it whole, or beaten Gross, as was formerly mentioned conserning their other Corne. These Eares while they are greene and sweete they roast before the fire, or covered with Embers, and so Eate the Corne, picking it off the roasted Eares as they Eate it, therefore at that time of the yeare, when this Corne beginneth to be thus full in the Eare, they have sufficient supply of Food, though there store be done, and their Soldiers doe then most commonly goe out against their Enemyes, because they have this supply both in their Marches if it be in places inhabited, and also in the Fields of those Enemyes against whom they make Warr, but this is observable amongst them, that they do not Cutt downe, or spoile their Enemies Corne more then they gather to Eat.

The English have found out a way to make very good Beere of this Graine which they doe either out of Bread made of it, or by Maulting of it, that way of makeing Beere, of Bread, is onely by makeing the Bread in the manner as before described, and then breake it or Cutt it into greate Lumps, as bigg as a

[15] Perhaps to be identified as Edmund Wilson, of Oxford and Padua, Fellow of the College of Physicians, Censor and Harveian Orator, who died in 1657. William Munk, *The Roll of the Royal College of Physicians of London* (London, 1878), I, 246.

mans Fist or bigger (for it must not be broken small) then they Mash it and proceed every way about brewing of it, as is used in Brewing Beere of Mault, adding hopps to it as to make Beere.

In makeing Mault of it to make it good there is a singular way must be used. The Maulters that make Mault of Barly have used all their skill to make Mault also of this Corne, but cannot bring it the ordinary way to such a perfecion that the whole Graine is Maulted, and tender, and Flowry, as other Mault; Nor will the Beere made of it be well Coloured, but witish, the reason that it doth not come to the perfection of good Mault in that way of Maulting as of other Graine, is this. It is found by experience, that this Corne before it be fully changed into the nature of Mault, must sprout out both wayes a great length the length of a Finger at least, but if more its better, so as it must put out the Roote as well as the upper sprout, and that it may so do, it is necessary that it be laide upon an heape a convenient time till it doth so sprout, but if it lieth of a sufficient thickness for this purpose, it will quickly heate and moulde, if it be stirred and opened to prevent the too much heating of it, those Sprouts that are begun to shoote out (if spread thin) cease growing, and consequently the Corne ceaseth to be promoted to that mellowness of Mault. If left thick till they grow any length they are so intangled one in the other and so very tender that the least stirring and opening of the heape breaketh those axells of, and every Graine that hath the sprout, so broken ceaseth to grow to any further degree towards the nature of Mault, and soone groweth mouldy if not often stirred and spread thinn. To avoid all these difficulties, and to bring every sound Graine to the full perfection of good Mault, this way was tried, and found a sure and perfect way to it. In a Field or Garden or any where that there is loose Earth, take away the top of that Earth two or three Inches for so great a space as may be proportionable to the Quantity of Corne intended to be made into Mault, the Earth may be throwne up halfe one way, and halfe the other, for the more facility of that, and the following labour. Then upon the even Bed, or Floore of Earth where the upper part is so taken off, there lay the Corne intended to be maulted all over, that it may fully cover the Ground, then cover it over with the same Earth, that was taken thence, and then you have no more to doe, till you see all that plott of Ground like a greene Field covered over with the sprouts of the Corne, which within tenn dayes, or a Fortnight, more or less according to the time of yeare wilbe growne greene upwards, and Rooted downwards, and then there is no more to be done but to take it up and shake the Earth from it and drie it. It will by the Insnarlements of the Rootes one with another be like a Matt and hang so together that it may be raised in greate

peices and the Earth shaken off from it (which is best to be done in a dry time) and then to make it very cleane, it may be washed and presently dried upon a Hill or in the Sun, or in that Countrey it selfe, spread thinn on a Chamber floore. This way every Graine that was sound, and good will grow and consequently become Mault, and no part of the Graine remains steely (as is alwayes in the other wayes of maulting it) but be mellow, and Flowry and very sweete, and the Beere that is made of this Mault wilbe of a very good browne Colour, and be a pleasant, and wholesome drinke. But because the other way of makeing Beere out of the Bread, as before sett downe, is found to be as well Coloured, and pleasant, and every way as good and very wholesome without any windy Quality, and keepeth better from Sowring then any other Beere of that Corne, therefore that way of Brewing is most in use in that Countrey, that way of Maulting being also yet little knowne.

PHILOSOPHICAL Transactions:

GIVING SOME

ACCOMPT

OF THE

Present Undertakings, Studies and Labours

OF THE

INGENIOUS

IN MANY

Considerable Parts

OF THE

WORLD.

VOL. XI.

For the Year MDCLXXVI.

LONDON,

Printed by *T. R.* for *John Martyn*, Printer to the *Royal Society*; at the *Bell* in St. *Pauls Church-yard.*

The Deſcription, Culture, and Uſe of Maiz. Communicated by Mr. Winthorp.

THe Corn, uſed in *New-England* before the *Engliſh* Planted there, is called by the Natives, *Weachin*, known by the name of *Maiz* in ſome Southern parts of *America*, where, and even in the Northern parts, amongſt the *Engliſh* and *Dutch*, who have plenty of Wheat and Grain, this ſort of Corn is ſtill much in uſe both for Bread, and other kind of food.

The Ear is for the moſt part, about a ſpan long, compoſed of ſeveral, commonly 8. rows of Grains, or more, according to the goodneſs of the Ground; and in each row, uſually above 30. Grains. Of various colours, as Red, White, Yellow, Blew, Olive, Greeniſh, Black, ſpecked ſtriped, *&c.* ſometimes in the ſame field, and the ſame Ear. But the White and Yellow are the moſt common.

The Ear is cloathed and armed with ſeveral ſtrong thick Husks. Not only defending it from the Cold of the Night (being the latter end of *September* in ſome parts before it be full ripe) and from unſeaſonable Rains: but alſo from the Crows, Starlings and other Birds; which being allured by the ſweetneſs of the Corn before it hardneth, come then in great flights into the fields, and pecking through the top of the Cover, devour as far as they can reach,

The Stalk groweth to the hight of 6. or 8. feet; more or leſs, according to the condition of the Ground, or kind of Seed. The *Virginian* groweth taller than that of *New England*. And there is another ſort uſed by the Northern Indians far up in the Country, that groweth much ſhorter than that of *New-England*. 'Tis always joynted like a Cane. And is full of ſweet juice, like the Sugar-Cane. And a Syrup as ſweet as Sugar may be made of it; as hath been often try'd. And Meats ſweetned with it, have not been diſtinguiſhed from the like ſweetned with Sugar. Trial may eaſily be made, whether it will not be brought to Cryſtallize or ſhoot into a Saccharine Powder, as the juice of the Sugar-Cane.

At every joynt there are long Leaves almoſt like flags, and at the top, a bunch of flowers, like the bloſſoms of Rye.

It is Planted between the middle of *March* and the beginning of *June*. But moſt commonly from the middle of *April* to the middle of *May*. Some of the Indians take the time of the coming up of a Fiſh, called *Aloofes*, into the Rivers. Others of the budding of ſome Trees.

In the pure Northerly parts, they have a peculiar kind calld *Mohauks* Corn, which though planted in *June*, will be ripe in ſeaſon. The ſtalks of this kind are ſhorter, and the Ears grow nearer the bottom of the ſtalk, and are generally of divers colours.

The

The manner of Planting is in Rows, at equal distance every way, about 5. or 6. feet. They open the Earth with an Howe, taking away the surface 3. or 4. inches deep, and the bredth of the Howe; and so throw in 4. or 5. Granes, a little distant one from another, and cover them with Earth. If two or three grow, it may do well. For some of them are usually destroyed by Birds, or Mouse-Squirrels.

The Corn grown up an hands length, they cut up the weeds, and loosen the Earth, about it, with a broad Howe: repeating this labour, as the Weeds grow. When the Stalk begins to grow high, they draw a little Earth about it: and upon the putting forth of the Eare, so much, as to make a little Hill, like Hop-Hill. After this, they have no other business about it, till Harvest.

After 'tis gather'd, it must, except laid very thin, be presently stripped from the Husks; otherwise it will heat, grow mouldy, and sometimes sprout. The common way (which they call Tracing) is to weave the Ears together in long Traces by some parts of the Husk left thereon. These Traces they hang upon Stages or other Bearers within doors, or without; for, hung in that manner, they will keep good and sweet all the Winter after, though exposed to all weathers.

The Natives commonly Thresh it as they gather it, dry it well on Mats in the Sun, and then bestow it in holes in the Ground (which are their Barns) well lined with withered Grass and Matts, and then covered with the like, and over all with Earth: and so its kept very well, till they use it.

The *English* have now taken to a better way of Planting by the help of the Plough; in this manner; In the Planting time they Plough single Furrows through the whole Field, about 6. feet distant, more or less, as they see convenient. To these, they Plough others a cross at the same distance. Where these meet they throw in the Corn, and cover it either with the Howe, or by running another Furrow with the Plough. When the Weeds begin to overtop the Corn, then they Plough over the rest of the field between the Planted Furrows, and so turn in the Weeds. This is repeated once, when they begin to Hill the Corn with the Howe; and so the Ground is better loosened than with the Howe, and the Roots of the Corn have more liberty to spread. Where any Weeds escape the Plough, they use the Howe.

Where the Ground is bad or worn out, the Indians used to put two or three of the forementioned Fishes, under or adjacent to each Corn-hill, whereby they had many times a Crop double to what the Ground would otherwise have produced.

The *English* have learned the like Husbandry, where these *Aloofes* come up in great plenty, or where they are near the Fishing-stages; having there the Heads and Garbage of Cod-fish in abundance, at no charge but the fetching.

The

The Fields thus Ploughed for this Corne, after the Crop is off, are almoſt as well fitted for *Engliſh* Corn, eſpecially Summer Grain, as Peaſon or Summer Wheat; as if lying fallow, they had had a very good Summer Tilth.

The Indians, and ſome *Engliſh* (eſpecially in good Ground, and well fiſhed) at every Corn-hill, plant with the Corn, a kind of *French* or *Turkey* Beans: The Stalks of the Corn ſerving inſtead of Poles for the Beans to climb up with. And in the vacant places between the Hills they will Plant Squaſhes and Pompions; loading the Ground with as much as it will bear. And many, after the laſt weeding, ſprinkle Turnep-ſeed between the Hills, and ſo, after Harveſt, have a good Crop of Turneps.

The Stalks of this Corn, cut up before too much dryed, and ſo laid up, are good Winter-fodder for Cattle. But they uſually leave them on the Ground for the Cattle to feed on. The Husks about the Ear are good Fodder, given for change ſometimes after Hay.

The Indian women ſlit them into narrow parts, and ſo weave them artificially into Baskets of ſeveral faſhions.

This Corn the Indians dreſſed ſeveral ways for their food. Sometimes boyling it whole till it ſwelled and became tender, and ſo either eating it alone, or with their Fiſh or Veniſon inſtead of Bread. Sometimes bruiſing in Mortars, and ſo boyling it. But commonly this way, *viz.* by parching it in Aſhes, or Embers, ſo artificially ſtirring it, as without burning, to be very tender, and turned almoſt inſide outward, and alſo white and flowry. This they ſift very well from the Aſhes, and beat it in their wooden Mortars, with a long Stone for a Peſtle, into fine Meal. This is a conſtant food at home, and eſpecially when they travel, being put up in a Bag, and ſo at all times ready for eating either dry or mixed with Water. They find it very wholſom Diet. And is that, their Souldiers carry with them in time of War. The *Engliſh* ſometimes for novelty, will procure ſome of this to be made by the *Indian* women, adding Milk or Sugar and Water to it, as they pleaſe.

The Indians have another ſort of Proviſion out of this Corn, which they call Sweet-Corn. When the Corn in the Ear is full, while it is yet green, it hath a very ſweet Taſt. This they gather, boyl, and then dry, and ſo put it up into baggs or baskets, for their uſe: boiling it again, either whole or groſly beaten, when they eat it, either by it ſelf, or amongſt their Fiſh or Veniſon or Beavers, or other Fleſh; accounting it a principal Diſh.

Theſe green and ſweet Ears they ſometimes roaſt before the Fire or in the Embers, and ſo eat the Corn. By which means, they have ſufficient ſupply of food, though their old Store be done. Their Souldiers alſo moſt commonly at this time goe out againſt their Ene-

mies, having this ſupply in their Marches both at home and in the Enemies fields.

The *Engliſh*, of the full ripe Corn, ground, make very good Bread. But 'tis not ordered as other Corn. For if it be mixed into ſtiff Paſte, it will not be ſo good, as if made only a little ſtiffer than for Puddings; and ſo baked in a very hot Oven, ſtanding therein all day or all night. Becauſe upon the firſt pouring of it on the Oven-floor, it ſpreads abroad, they pour a ſecond layer or heap upon every firſt, and thereby make ſo many Loves. Which if baked enough, and good, will be of a deep yellowiſh colour; if otherwiſe, white.

It is alſo ſometimes mixed with half or a third part of Rye or Wheat Meal, and ſo with Leaven or Yeſt made into Loaves of very good Bread.

Before they had Mills, having firſt watered and Husked the Corn, and then beaten it in Wooden Mortars; the courſer part ſifted from the Meal, and ſeparated from the looſe Hulls by the Wind, they boyled to a thick Batter: to which being cold, they added ſo much of the fine Meal, as would ſerve to ſtiffen it into Paſt, whereof they made very good Bread.

But the beſt ſort of Food which the *Engliſh* make of this Corn, is that they call *Samp*. Having firſt watered it about half an hour, and then beaten it in a Mortar, or elſe ground it in a Hand or other Mill, into the bigneſs of Rice, they next ſift the Flower, and Winnow the Hulls from it. Then they boyl it gently, till it be tender, and ſo with Milk or Butter and Sugar, make it into a very pleaſant and wholſom Diſh. This was the moſt uſual Diet of the firſt Planters in theſe Parts, and is ſtill in uſe amongſt them, as well in Feavers, as in Health: and was often preſcribed by the Learned Dr. *Wilſon* to his Patients in *London*. And of the *Indians* that live much upon this Corn, the *Engliſh* moſt acquainted with them, have been informed by them, That the Diſeaſe of the Stone is very ſeldom known amongſt them.

The *Engliſh* have alſo found out a way to make very good Beer of Grain: that is, either of Bread made hereof, or elſe by Malting it. The way of making Beer of Bread, is by breaking or cutting it into great lumps about as big as a mans fiſt, to be maſh'd, and ſo proceeded with as Malt, and the impregnated Liquor, as Woort, either adding or omitting Hopps, as is deſired.

To make good Malt of this Corn, a particular way muſt be taken. The Barly-Malt-Maſters have uſed all their skill to make good Malt hereof the ordinary way; but cannot effect it; that is, that the whole Grain be Malted, and tender and flowry, as in other Malt. For it is found by experience, that this Corn, before it be fully Malted, muſt ſprout out both ways, (*i.e.* both Root and Blade), to a great length; of a finger at leaſt; if more, the better. For which, it muſt be laid upon an heap

heap a convenient time. Wherein on the one hand, if it lyeth of a ſufficient thickneſs for coming, it will quickly heat and mould, and the tender Sprouts be ſo intangled, that the leaſt opening of the Heap breaks them off; and ſo hinders the further maturation of the Grain into Malt. On the other, if it be ſtirred and opened to prevent too much heating, theſe ſprouts which have begun to ſhoot, ceaſe growing, and conſequently the Corn again ceaſeth to be promoted to the mellowneſs of Malt.

To avoid all theſe difficulties, this way was try'd and found effectual: Take away the top of the Earth in a Garden or Field two or three inches, throwing it up half one way, and half the other. Then lay the Corn, for Malt, all over the Ground ſo as to cover it. Then cover the Corn with the Earth that was pared off; and there is no more to do, till you ſee all the Plot of Ground like a green Field covered over with the Sprouts of the Corn, which will be within ten days or a fortnight, according to the time of the year. Then take it up, and ſhake the earth from it and dry it. For the Roots will be ſo intangled together, that it may be raiſed up, in great pieces. To make it very clean, it may be waſhed, and then preſently dry'd on a Kiln, or in the Sun, or ſpread thin on a Chamber floor. This way, every Grain that is good will grow, and be mellow, flowry and very ſweet; and the Beer made of it, be wholſom, pleaſant, and of a good brown colour.

Yet Beer made of the Bread, as aforeſaid, being as well coloured, as wholſom and pleaſant, and more durable; this therefore is moſt in uſe. And the rather, becauſe the way of Malting this Corn, laſt deſcribed, is as yet but little known amongſt them.

An Account of the manner of making Malt in Scotland; *by Sir* Robert Moray.

MAlt is there made of no other Grain, but Barley. Whereof there are two kinds; one, which hath four Rows of Grains on the Ear; the other, two Rows. The firſt is the more commonly uſed; but the other makes the beſt Malt.

The more recently Barly hath been Threſhed it makes the better Malt. But if it hath been Threſhed ſix weeks or upwards, it proves not good Malt, unleſs it be kept in one equal temper; whereof it eaſily failes, eſpecially if it be kept up againſt a Wall: for that which lies in the middle of the Heap is freſheſt, that which lies on the outſides and at top is over dry'd, that which is next the Wall ſhoots forth, and that which is at the bottom Rots. So that when it comes to be made into Malt, that which is ſpoiled, does not *Come* well (as they call it) that is, never gets that right mellow temper Malt ought to have, and ſo ſpoils all the reſt. For thus ſome Grains *Come* well, ſome not at all, ſome half, and ſome too much.